

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) An isolated ~~protein or~~ polypeptide ~~comprising the amino acid sequence~~

~~X-P-X-P-X-X-P-X-P (SEQ ID NO: 1)~~

~~wherein X at position 1 is R, K, or Q;~~

~~X at position 3 is any amino acid;~~

~~X at position 5 is optional and can be P;~~

~~X at position 6 is K, Q, or R; and~~

~~X at position 8 is any amino acid;~~

~~wherein the isolated polypeptide is not a full-length Pneumocystis kexin~~

~~Pneumocystis kexin or a full length Streptococcus pneumoniae Streptococcus pneumoniae pneumococcal surface protein A (PspA) encoded by a nucleic acid molecule that (i) shares at least about 85 percent identity to the nucleotide sequence of 1-837 of SEQ ID NO: 4 or (ii) hybridizes to the complement of the nucleotide sequence of 1-837 of SEQ ID NO: 4 under stringency conditions comprising a hybridization medium that contains at most about 10X standard sodium citrate (SSC) and a temperature of about 50°C or greater followed by wash conditions at or above stringency conditions of the hybridization.~~

2-4. (Canceled)

5. (Currently amended) The isolated ~~protein or~~ polypeptide according to ~~claim 4~~ claim 1 wherein the ~~protein or~~ polypeptide comprises is clone A12 of Pneumocystis carinii SEQ ID NO: 5.

6-11. (Canceled)

12. (Currently amended) A pharmaceutical composition comprising:
the isolated ~~protein or~~ polypeptide according to claim 1 and
a pharmaceutically acceptable carrier.

13-24. (Canceled)

25. (Withdrawn—Currently amended) An immunogenic conjugate comprising:
a carrier ~~protein or~~ polypeptide according to claim 1 ~~comprising the amino acid~~
sequence

X-P-X-P-X-X-P-X-P (SEQ ID NO: 1)

wherein X at position 1 is R, K, or Q;

X at position 3 is any amino acid;

X at position 5 is optional and can be P;

X at position 6 is K, Q, or R; and

X at position 8 is any amino acid; and

a bacterial molecule covalently or non-covalently bonded to the carrier ~~protein or~~
polypeptide.

26-28. (Canceled)

29. (Withdrawn—Currently amended) The immunogenic conjugate according
to claim ~~28~~ 25 wherein the ~~Pneumocystis protein or~~ polypeptide comprises is a toxin or a protein
~~or polypeptide comprising the amino acid sequence of clone A12~~ SEQ ID NO: 5.

30-31. (Canceled)

32. (Withdrawn) A pharmaceutical composition comprising:
the immunogenic conjugate according to claim 25 and
a pharmaceutically acceptable carrier.

33-37. (Canceled)

38. (Withdrawn—Currently amended) A method of treating or preventing
infection in a patient by a Pneumocystis organism, the method comprising:
administering to a patient an amount of one or more agents selected from the group
of:

(i) the ~~protein or~~ polypeptide according to claim 1,

(ii) a first immunogenic conjugate comprising the ~~protein or~~ polypeptide of (i) covalently or non-covalently bonded to a carrier molecule,

(iii) a second immunogenic conjugate comprising a carrier protein or polypeptide that includes the ~~protein or~~ polypeptide of (i) and a bacterial molecule covalently or non-covalently bonded to the carrier protein or polypeptide, or

(iv) combinations thereof,

where the amount is effective to induce an immune response in the patient and thereby treat or prevent infection of the patient by a *Pneumocystis* organism.

39. (Withdrawn) The method according to claim 38 wherein said administering is carried out orally, by inhalation, by intranasal instillation, topically, transdermally, parenterally, subcutaneously, intravenous injection, intra-arterial injection, intramuscular injection, intraplurally, intraperitoneally, by intracavitary or intravesical instillation, intraocularly, intraventricularly, intralesionally, intraspinally, or by application to mucous membranes.

40. (Withdrawn—Currently amended) The method according to claim 38 wherein the ~~protein or~~ polypeptide or one or both of the immunogenic conjugates is present in a pharmaceutical composition.

41. (Withdrawn—Currently amended) The method according to claim 38 wherein the ~~protein or~~ polypeptide is administered.

42. (Withdrawn—Currently amended) The method according to claim 41 wherein the ~~protein or~~ polypeptide comprises the amino acid sequence of ~~clone A12~~ SEQ ID NO: 5.

43. (Withdrawn) The method according to claim 38 wherein the first immunogenic conjugate is administered.

44. (Canceled)

45. (Withdrawn) The method according to claim 38 wherein the second immunogenic conjugate is administered.

46. (Withdrawn—Currently amended) The method according to claim 45 wherein the carrier protein or polypeptide ~~comprises is a Pneumocystis kexin or comprises the amino acid sequence of Pneumocystis clone A12~~ SEQ ID NO: 5.

47. (Canceled)

48. (Withdrawn) The method according to claim 45 wherein the bacterial molecule is a pneumococcal capsular polysaccharide or a meningococcal outer membrane protein.

49. (Withdrawn) The method according to claim 38, wherein a combination of two or more of the agents is administered.

50. (Withdrawn) The method according to claim 38 wherein the patient is a mammal.

51-63. (Canceled)

64. (Withdrawn—Currently amended) A method of treating or preventing infection in a patient by a Pneumocystis organism, the method comprising:

administering to a patient an amount of a ~~Pneumocystis protein or polypeptide comprising the amino acid sequence of SEQ ID NO: 5-clone A12, a Pneumocystis kexin, or any combination thereof~~, where the amount is effective to induce an immune response in the patient and thereby treat or prevent infection of the patient by the Pneumocystis organism.

65. (Withdrawn—Currently amended) An isolated nucleic acid molecule encoding the isolated ~~protein or polypeptide~~ according to claim 1.

66-67. (Canceled)

68. (Withdrawn—Currently amended) The isolated nucleic acid molecule according to claim 65 wherein the encoded ~~protein or polypeptide~~ comprises the amino acid sequence of ~~Pneumocystis carinii clone A12~~ SEQ ID NO: 5.

69. (Canceled)

70. (Withdrawn) The isolated nucleic acid according to claim 65 wherein the nucleic acid is DNA.

71. (Withdrawn) A DNA construct comprising:
a DNA molecule according to claim 70; and
transcriptional and translational regulatory sequences operably linked to said nucleotide sequence.

72-73. (Canceled)

74. (Withdrawn—Currently amended) The DNA construct according to claim 71 wherein the transcriptional and translational regulatory sequences are effective for expressing the encoded ~~protein or~~ polypeptide in a prokaryotic cell.

75. (Withdrawn—Currently amended) The DNA construct according to claim 71 wherein the transcriptional and translational regulatory sequences are effective for expressing the encoded ~~protein or~~ polypeptide in a eukaryotic cell.

76. (Withdrawn—Currently amended) The DNA construct according to claim 71 wherein the transcriptional and translational regulatory sequences are effective for expressing the encoded ~~protein or~~ polypeptide in a mammal.

77. (Withdrawn) An expression vector into which is inserted the DNA construct according to claim 71.

78. (Withdrawn) The expression vector according to claim 77 wherein the vector is a plasmid or a viral vector.

79. (Withdrawn—Currently amended) The expression vector according to claim 78 wherein the transcriptional and translational regulatory sequences are effective for expressing the encoded ~~protein or~~ polypeptide in a mammal.

80. (Withdrawn) A host cell comprising the DNA construct according to claim 71.

81. (Withdrawn) The host cell according to claim 80 wherein the host cell is an animal cell, a bacterial cell, an insect cell, a fungal cell, a yeast cell, a plant cell, or an algal cell.

82. (Withdrawn—Currently amended) The host cell according to claim 80 wherein the host cell is a mammalian cell and the transcriptional and translational regulatory sequences are effective for expressing the encoded ~~protein or~~ polypeptide in a mammal cell.

83. (Withdrawn) The host cell according to claim 82 wherein the host cell is in vivo.

84. (Withdrawn) The host cell according to claim 82 wherein the host cell is in vitro.

85. (Withdrawn) The host cell according to claim 81 wherein the DNA construct is present in an expression vector.

86. (Withdrawn) A liposomal composition comprising:
a pharmaceutically acceptable carrier;
a plurality of liposomes suspended in the pharmaceutically acceptable carrier, each comprising a lipid vesicle and an aqueous phase retained within the lipid vesicle; and
one or more DNA constructs according to claim 71 present within the aqueous phase of the liposomes.

87. (Withdrawn) The liposomal composition according to claim 86 wherein each of the one or more DNA constructs is present in an expression vector.

88. (Withdrawn) A polymeric delivery vehicle comprising a polymeric matrix and one or more DNA constructs according to claim 71.